IN THE CLAIMS

Please amend the claims as follows:

1. (original) Storage system comprising a information carrier and a storage unit,

- the information carrier (40) having an information plane (28) that is provided with a pattern of superparamagnetic material constituting an array of storage locations (11), the presence of a specific superparamagnetic material at the information plane (28) representing a value of a storage location, the specific superparamagnetic material having a predefined response to a varying magnetic field,

and

- the storage unit having an interface surface (32) for cooperating with the information plane (28), which interface surface is provided with field generating means (27) for generating the varying magnetic field, and with an array of magnetic sensor elements (24,25,26) each having a sensitive area for generating a read signal, and a processing unit (33) for detecting said presence via the predefined response by processing the read signal.

2. (original) System as claimed in claim 1, wherein the pattern of superparamagnetic material comprises a number of different

superparamagnetic materials, the different superparamagnetic materials having respective different predefined responses to the varying magnetic field, in particular the different predefined responses being different decay of magnetization after a decrease of the varying magnetic field due to different relaxation times of the different superparamagnetic materials.

3. (original) System as claimed in claim 2, wherein the pattern of superparamagnetic material comprises areas of different superparamagnetic materials arranged according to a predefined pattern.

4. (original) System as claimed in claim 2, wherein the pattern of superparamagnetic material comprises a combination of said different superparamagnetic materials in at least one of the storage locations, the combination representing said value.

5. (original) System as claimed in claim 2, wherein the pattern of superparamagnetic material comprises a separate pattern for each of said number of different superparamagnetic materials, the separate patterns each having separate storage locations, which separate storage locations are positioned at mutually shifted positions.

6. (original) System as claimed in claim 1, wherein the sensitive area of an magnetic sensor element (24,25,26) corresponds to an area of a number of storage locations.

7. (original) System as claimed in claim 6, wherein the pattern of superparamagnetic materials comprises a number of different superparamagnetic materials, the different superparamagnetic materials having different predefined responses to the varying magnetic field, and said number of storage locations corresponds to said number of different superparamagnetic materials.

8. (original) System as claimed in claim 6, wherein the magnetic sensor elements (24,25,26) have a pitch in the array substantially not corresponding integral number of storage locations, in particular the pattern of superparamagnetic material comprising areas of 4 different superparamagnetic materials arranged according to a predefined pattern of 2 x 2 storage areas and said pitch being 1,5x the pitch of the storage locations.

9. (original) System as claimed in claim 1, wherein the processing unit (33) for detecting said presence by processing the

read signal is arranged for detecting a response in the read signal in a period following a decrease in the varying magnetic field.

10. (original) System as claimed in claim 9, wherein the processing unit (33) for detecting said presence by processing the read signal is arranged for detecting a response in a combination of read signals of several sensor elements (24,25,26).

11. (original) System as claimed in claim 1, wherein the processing unit (33) for detecting said presence by processing the read signal is arranged for detecting the position of a sensor element with respect to a storage location in the pattern of superparamagnetic material, and
- for generating a position error signal indicative of a misalignment of the sensor element, and/or
- for compensating interference of neighboring storage locations in dependence of the detected position.

12. (original) System as claimed in claim 1, wherein the pattern of superparamagnetic material is provided with a mark pattern for detecting the position of the pattern of superparamagnetic material with respect to the array of a sensor elements, the mark pattern

providing a uniquely detectable pattern of areas of superparamagnetic material.

13. (original) System as claimed in claim 12, wherein the mark pattern comprises sync areas of superparamagnetic material, which sync areas are larger than the storage locations.

14. (currently amended) System as claimed in claim 12~~ or 13~~, wherein the processing unit (33) for detecting said presence by processing the read signal is arranged for detecting the mark pattern.

15. (original) System as claimed in claim 1, wherein the means (27) for generating the varying magnetic field are arranged for generating a pulsed magnetic field, in particular including periods having substantially no magnetic field.

16. (original) System as claimed in claim 15, wherein the pulsed magnetic field comprises pulses of different pulse lengths, in particular for detecting different predefined responses being different decay of magnetization due to different relaxation times of different superparamagnetic materials.

17. (original) System as claimed in claim 1, wherein the means (27) for generating the varying magnetic field are arranged for generating the field substantially in a direction perpendicular to a sensitivity direction of the sensor elements.

18. (original) System as claimed in claim 1, wherein the storage unit is provided with heating means for locally heating the information plane.

19. (original) System as claimed in claim 1, wherein the information carrier (40) can be coupled to and removed from the storage unit, and the system having alignment means (38,41) for positioning the storage locations near the sensor elements within a near-field working distance between a storage location and the corresponding sensor element during said coupling.

20. (original) Information carrier for storing information, the information carrier having an information plane that is provided with a pattern of superparamagnetic material constituting an array of storage locations (11), the presence of a specific superparamagnetic material at the information plane representing a value of a storage location, the specific superparamagnetic material having a predefined response to a varying magnetic field.

21. (original) Information carrier as claimed in claim 20, wherein the substrate is of a flexible material for allowing positioning of the storage locations near the sensor elements (24,25,26) within the near-field working distance between a storage location and the corresponding sensor element.

22. (original) Information carrier as claimed in claim 20, wherein the information carrier comprises a cartridge (47) having an opening for exposing the information plane when coupled to the device and a cover (48) for closing the opening when removed from the device.

23. (original) Storage device for reading an information carrier as claimed in claim 20, characterized in that the device comprises an interface surface (32) for cooperating with the information plane, which interface surface is provided with field generating means for generating the varying magnetic field, and with an array of magnetic sensor elements (24,25,26) each having a sensitive area for generating a read signal, and a processing unit (33) for detecting said presence via the predefined response by processing the read signal.

24. (original) Device as claimed in claim 23, wherein the processing unit (33) for detecting said presence by processing the read signal is arranged for detecting a response in the read signal in a period following a decrease in the varying magnetic field.

25. (original) Device as claimed in claim 23, wherein the array of sensor elements has substantially less sensor elements then the total number of storage locations of the information carrier, and the device comprises alignment means (42,44) for positioning said array or the information carrier at different alignment positions that in combination cover the total number of storage locations.